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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Michiaki Sakamoto

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12/13/2005

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EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,077

Applicant(s)

SAKAMOTO, MICHIAKI

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26, 28-43, 45 and 46 is/are pending in the application.
- 4a) Of the above claim(s) 28-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26, 42-43, 45-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' amendment dated 09/14/2005 has been received and entered. By the amendment, claims 26, 42-43, 45-46 are remain pending in the application.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claim 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., US Patent No. 5,852,485, in view of Kadota et al., US Patent No. 5,818,550 and Hayase et al., US Patent No. 5,702,776.

Regarding claims 26, Shimada et al. disclose an in-plane switching liquid crystal display (LCD) device having:

- . a pair of substrate (21, 212);
- . a gate insulating layer (23)
- . a protection layer (29) formed over the lower substrate (21)
- . a thin film transistor (TFT) formed on the lower substrate (21);
- . a color filter (218);
- . a liquid crystal layer (217) formed between the color filter (218) and substrate (212);
- . a common electrode (213) and a pixel electrode disposed between the color filter and the liquid crystal layer;
- . an alignment layer (216).

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Shimada et al., however, do not disclose the color filter forming over the protective layer. Kadota et al. et al. do disclose that a color filter (9) can be formed over a protective layer (4c) (see figure 4). Therefore, it would have been obvious to one skill of ordinary in the art to employ the Shimada et al. color filter (218) over the protective layer (29) as shown by Kadota et al., since it has been held that rearranging parts of an invention involves only routine skill in the art (as evidence from Kadota et al.).

In addition, Shimada et al., neither discloses a flat color filter nor an insulating layer forming between the pixel electrode and the common electrode. Hayase et al. do disclose a color filter (10) having a flat surface formed on a lower substrate (11). Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to employ a color filter having flat-surface on both sides (upper surface and lower surface) in the Shimada et al. device as shown by Hayase et al., since it is a common practice in the LCD art in order to obtain a highly refined color filter in an LCD device (col. 2, ln. 8). In addition, one skilled in the art would have realized the desire to form an interlayer between two electrodes (e.g., pixel and common electrodes in different layers) for insulating such two electrodes. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to form a common electrode under an insulating layer and a pixel electrode over the insulating layer in order to avoid cross-talk between two different electrodes.

3. Claims 42-43 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., US Patent No. 5,852,485, in view of Kadota et al., US Patent No. 5,818,550 and Hayase et al., US Patent No. 5,702,776, further in view of Xu et al., US Patent No. 6,023,317.

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Regarding the above claims, the modification to the Shimada et al. discloses the claimed invention as described above except for compensation films forming between a substrate and a polarizing film. Xu et al. do disclose in figures 1-3 that an optical compensation film (e.g., positive and/or negative) can be disposed between a substrate and a polarizing film. Therefore, it would have been obvious to one skilled in the art to employ the optical compensation film in the Shimada et al. device in order to improve viewing characteristics (Xu et al., abstract).

4. Claim 45 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., US Patent No. 5,852,485, in view of Kadota et al., US Patent No. 5,818,550 and Hayase et al., US Patent No. 5,702,776, further in view of Kakinuma et al., US Patent No. 5,721,597.

Regarding claim 45, the modification to the Shimada et al. discloses the claimed invention as described above except for an organic material comprising monomers or oligomers added into the liquid crystal, and polymerized such liquid crystal compound. Kakinuma et al. disclose a liquid crystal layer can be formed by mixing monomers (or oligomers) into the liquid crystal, then polymerizing such liquid crystal compound (col. 6, lines 36-39). Therefore, it would have been obvious to one skilled in the art to employ the Shimada et al. liquid crystal layer by polymerizing a liquid crystal compound including liquid crystal and monomers or oligomers in order to improve the high speed response in an LCD device (col. 10, ln. 21).

5. Claim 46 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada et al., US Patent No. 5,852,485, in view of Kadota et al., US Patent No. 5,818,550 and Hayase et al., US Patent No. 5,702,776, further in view of Shim et al., US Patent No. 6,181,402.

Regarding claim 46, the modification to the Shimada et al. discloses the claimed invention as described above except for the vertical orientation films. Shim et al. disclose a homeotropic

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LCD device by forming vertical alignment layers as shown in figure 3A. Therefore, it would have been obvious to one skilled in the art at the time of the invention was made to modify the Shimada et al. device having a vertical alignment layer as shown by Shim et al. in order to obtain an LCD device having a wide viewing angle (col. 2, line 11).

It should be noted that the method of manufacturing the device is merely a list of forming each component and each component must be formed to make the device; therefore, the method of manufacturing as stated above would be inherent to the device.

Response to Arguments

6. Applicant's arguments filed 09/14/2005 have been fully considered but they are not persuasive.

. Applicants' arguments are as follow:

- a. Shimada and Hayase, taken alone or in any proper combination, fail to disclose or suggest Applicants' claimed flat color filter being flat on both an upper and a lower surface (amendment, page 8).
- b. There is no indication of a need for someone of ordinary skill in the art to modify Shimada so that an interlayer separation film is disposed between a common electrode and a pixel electrode.
- c. It is not obvious from Shimada and Kadota to form a color filter on a protective layer because of a black mask (therebetween).

. The Examiner's responses are as follow:

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- a. As stated above, a color filter has both upper and lower surfaces being flat is well known in the LCD art (e.g., color filter cited in the Kadota et al., US 5,818,550). In addition, it would have been an obvious to one having ordinary skill in the art at the time the invention was made to make a color filter having flat on both surfaces since the examiner takes Office Notice of the equivalence of the color filter with and without flatting on both surface for their use in the display art and the selection of any of these known equivalents to produce a color for a display would be within the level of ordinary skill in the art.
- b. It might not any indication of a need for someone of ordinary skill in the art to modify Shimada so that an interlayer separation film is disposed between a common electrode and a pixel electrode. However, as stated above, it is well known in the art to separate and form the pixel electrode/common electrode over different layers in order to prevent crosstalk therebetween.
- c. The modification to Shimada does not attempt to remove a black mask (8c), it is just rearranged the position of the color filter (9) over the protective layer (4c) as shown by Kadota and the black mask is still in the position of protecting the thin film transistor (TFT) underneath.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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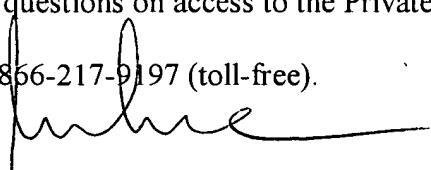
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
12/12/05



Dung Nguyen
Primary Examiner
Art Unit 2871